Supporting Adaptation in Coastal Watershed Communities: Models, Methods, and Measures of Success

New Hampshire Coastal Adaptation Workgroup

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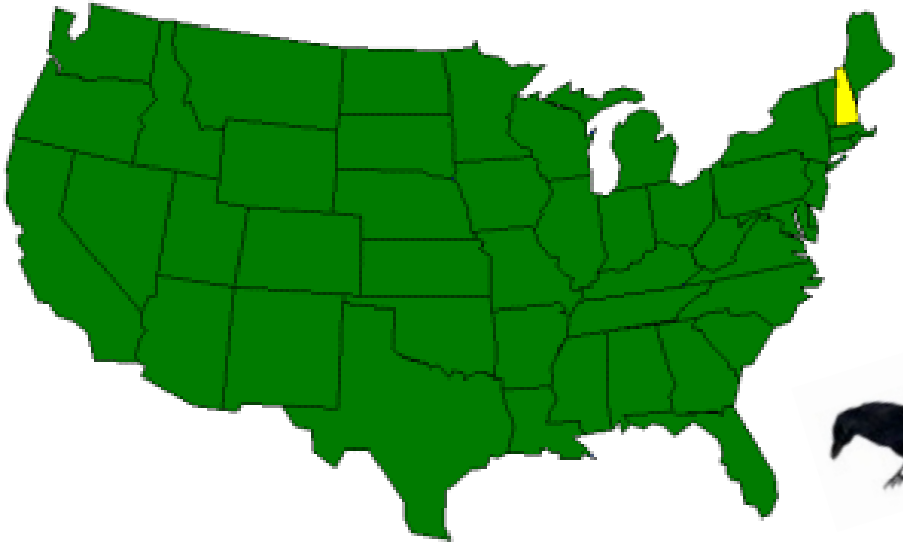
April 4, 2013
Denver, Colorado

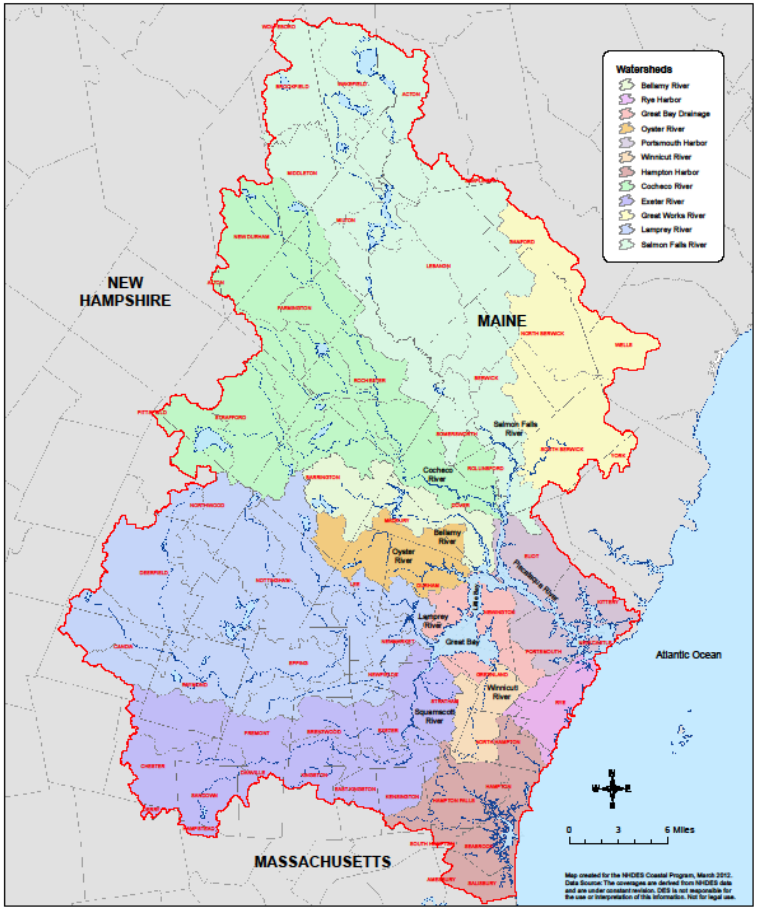
Overview

- New Hampshire – Small New England State
- The NH Coastal Adaptation Workgroup (CAW)
- Engaging Communities and Practitioners
- Measures of Success for CAW and our Communities



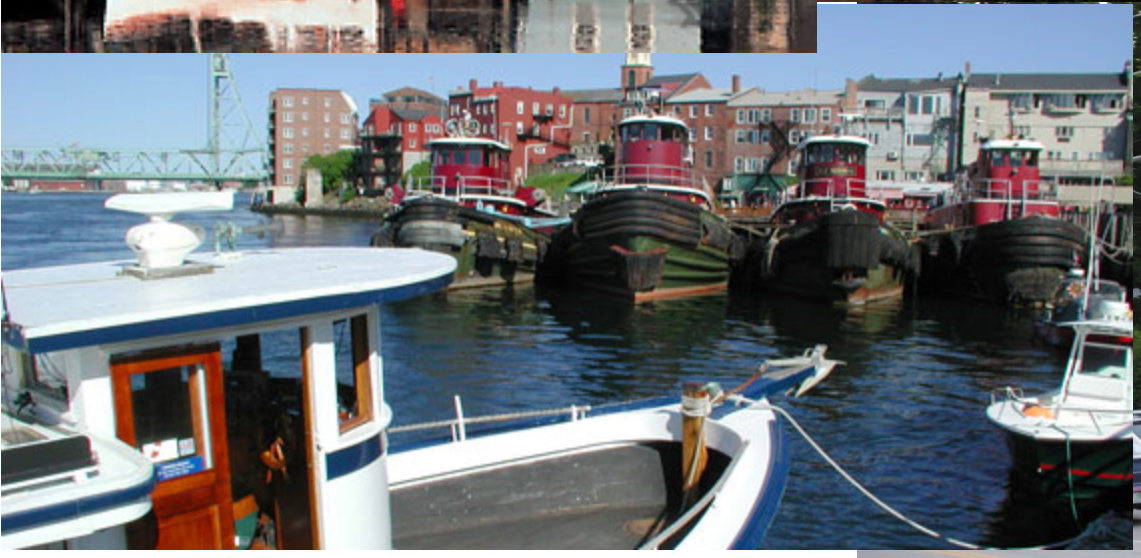
Where is New Hampshire Anyway?

Coastal Watershed




JULIE ANN II
NH5509BP
King Eider
EASTERN STAR


NEWFIELDS TOWN HALL



NH Coastal Adaptation Workgroup Partners

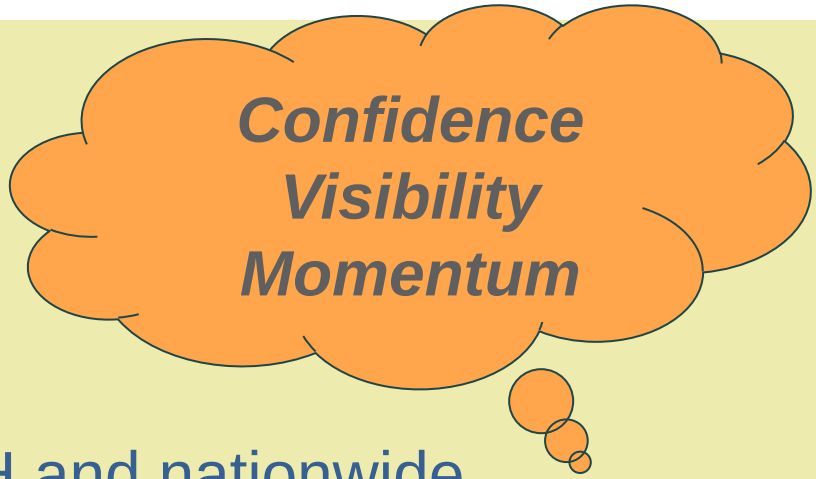
Federal State Regional Municipal Academic Non-profit Consulting

How CAW got started

- Interest in Climate Change – lack of support for climate science
- Previous Organizational Relationships
- Climate Action Plan – March 2009
- Began meeting regularly in January 2010
- Extreme storm events – municipalities, state & environment
- Workshop series – listening & learning what communities need
- Tapped into grant funds – leveraged funding
  - EPA, FEMA, NOAA, FHWA, HUD, CDC, NSF
  - Some private & foundation funding (Charitable Foundation, Kresge)

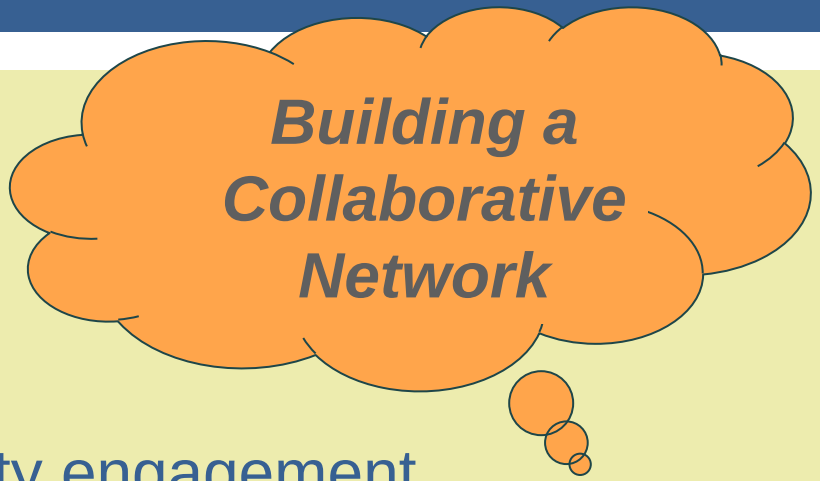
Crows are highly social, intelligent, & skilled problem solvers
Crows are messengers

Milestones



- “Hip Boot” tour – sea level rise
- Workshop Series
- Presentations - practitioners in NH and nationwide
- Data directory - vulnerability assessments
- Coastal Watershed Climate Assessment – local data, maps
- Lamprey River 100-Year Flood Assessment - maps, legal study
- COAST- Coastal Adaptation to Sea Level Rise Tool

Milestones



- Storm Smart Coasts website
- Journalist's Room
- Daniel Quinlan Award – community engagement
- Portsmouth – 1st NH Climate Vulnerability Assessment
- Multiple grants - $2.5 million
- In-kind time of members
- First annual retreat February 2013 – organizational vision
- Proposed legislation enabling coastal management in Master Plans and establish a Coastal Hazards Commission

NH Coastal Adaptation Workgroup Summary

- Independent municipalities
- Different needs for each community
- Different types of coast – rocky, sandy beach, sand dunes, estuarine
- Different Community demographics/capacity

Meaningful Engagement with Communities and Practitioners

ROCKINGHAM PLANNING COMMISSION

Julie LaBranche – Senior Planner

Southeastern/Seacoast New Hampshire

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Climate Adaptation for Coastal Watershed Communities

47 Municipalities = coastal, tidal, freshwater
upper, lower, headwaters
cites, towns, rural, urban

Prepare for changing climate

Provide education, facilitation, technical assistance

Pursue funding for research and assessment

Support coordination and collaboration

Encourage resiliency recognizing uncertainty

Document local perspectives and needs

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Climate Adaptation for Coastal Watershed Communities

Water, Weather, Climate and Community

a series of 6 workshops from 2010-2013

What methods were most effective?

- **World Café**
- **Open Discussion**
- **Topical Presentations**
- **Case studies- local "stories"**
- **Keypad polling**
- **Participant Evaluations**

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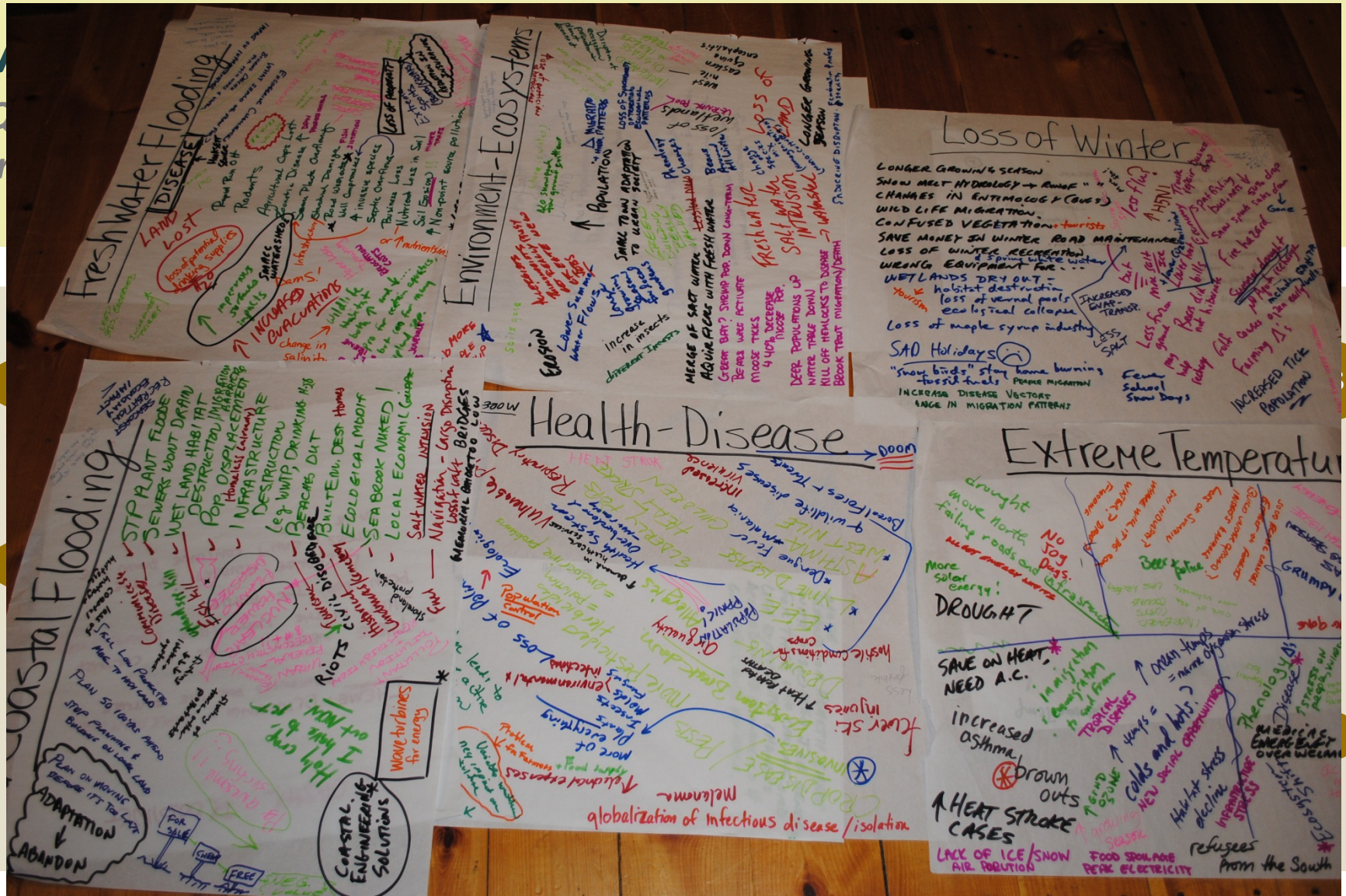
Climate Adaptation for Coastal Watershed Communities



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Climate Adaptation for Coastal Watershed Communities

Case Studies and Local Stories

we call it adaptation, locals call it common sense

- FEMA grant award of $1,889,802 in Flood Mitigation Assistance Program funds
- Acquisition of nine properties in the Spickett River floodplain
- Land designated as wetlands mitigation site for impacts associated with the I-93 expansion project

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Climate Adaptation for Coastal Watershed Communities

Case Studies and Local Stories

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SMALL ACTIONS YIELD RESULTS OVER TIME

- ❑ 2006-2007 - Water Supply, Groundwater Recharge Study, Drought/Flood issues
- ❑ 2009 – Update Master Plan Water Resources Chapter
- ❑ 2010 – DPW Drainage Study - tidal flooding on freshwater systems = culvert upgrades
- ❑ 2011 – Adopt new stormwater management regulations

- ❑ 2012-2013 – Update Land Use Chapter of Master Plan to include climate - adaptation, resiliency, vulnerability, coastal infrastructure and resources

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Climate Adaptation for Coastal Watershed Communities

Case Studies and Local Stories

we call it adaptation, locals call it common sense

ADAPTATION STEPS UNDERWAY

- Land Protection: Preserve transitional lands abutting the saltmarsh
- Master Plan: Adaptation Planning Study in 2011 Master Plan update
- Flood Hazard Overlay Zone: Considering "extended flood hazard overlay zone"
- Public Infrastructure: Discussion with School Board about future investments to "at risk" buildings
- Hazard Mitigation Planning: Update will address hazards associated with extended flood risk maps

Climate Ready Estuaries - COAST Project
Hampton-Seabrook Estuary

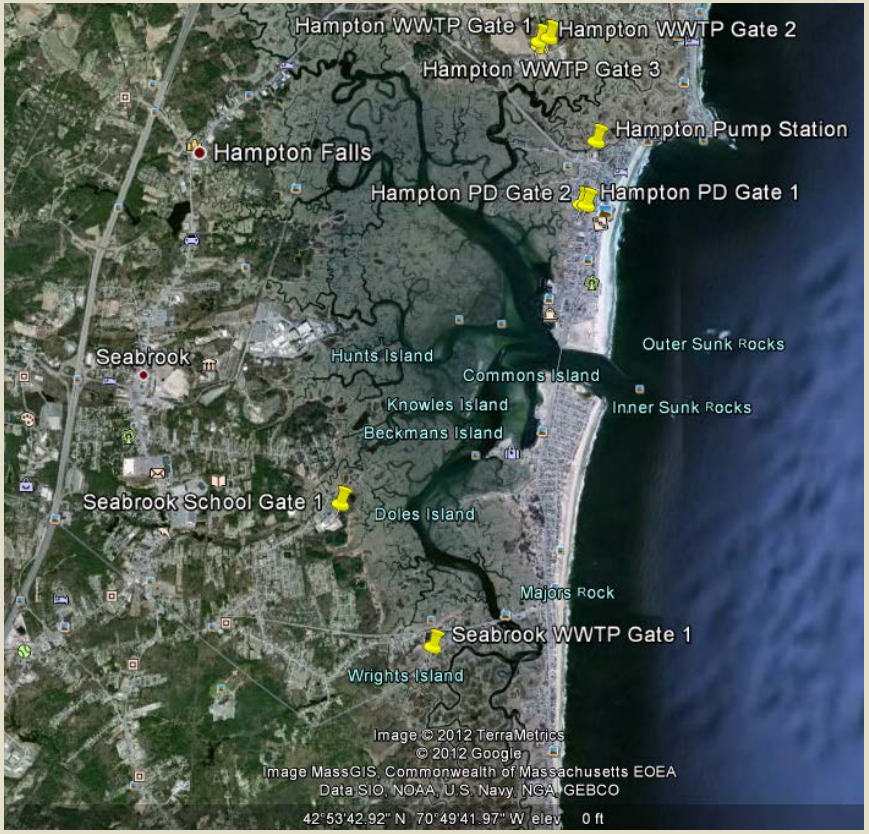
COAST - Coastal Adaptation to Sea Level Rise Tool

Study focused on 3 communities – Hampton, Hampton Falls and Seabrook

Investigation of the impacts of sea level rise and storm surge on public and private real estate

COAST tool evaluates costs and benefits of proactive adaptation actions in comparison to "do nothing" options.

GATHERING OF COMMUNITY CHAMPIONS

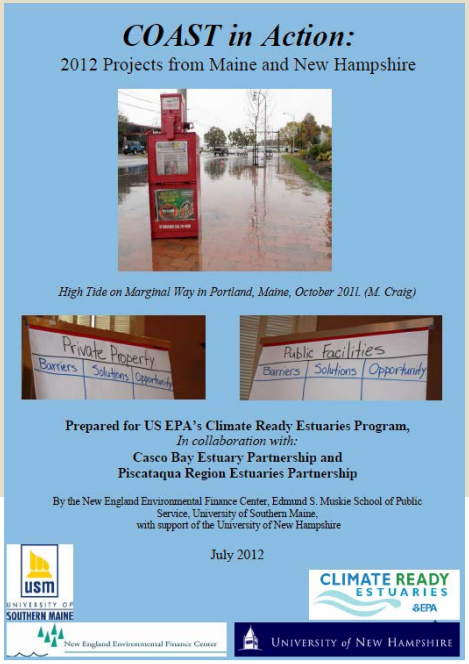


Hampton-Seabrook Estuary and Coastal Area

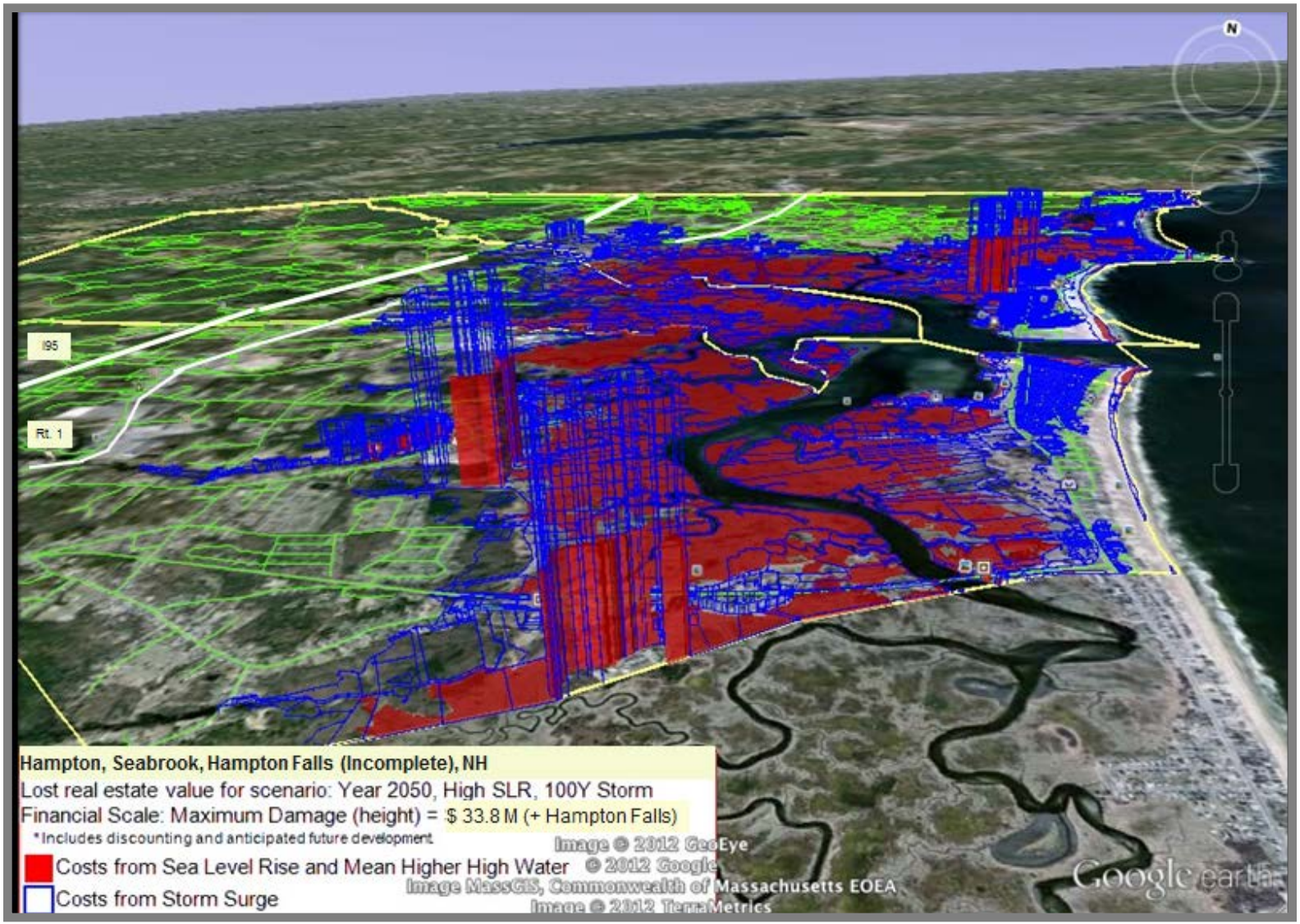
Climate Ready Estuaries - COAST Project
Hampton-Seabrook Estuary

Tools to Inform Decision Making

- ✓ ***Map Set for each town***
- ✓ ***Flood projections for a range of conditions at 2050 and 2100***
- ✓ ***Cumulative Impact Assessment ($)***
- ✓ ***Damages avoided vs. costs of action or investment for a range of scenarios***



Climate Ready Estuaries - COAST Project
Hampton-Seabrook Estuary



NEED FOR WIDER COMMUNITY ENGAGEMENT

- ❑ Need effective communication of process and results
- ❑ Education – sea level rise, storm surge mapping and projections
- ❑ Decision-makers need citizen support
- ❑ Local stories about issues surrounding climate impacts

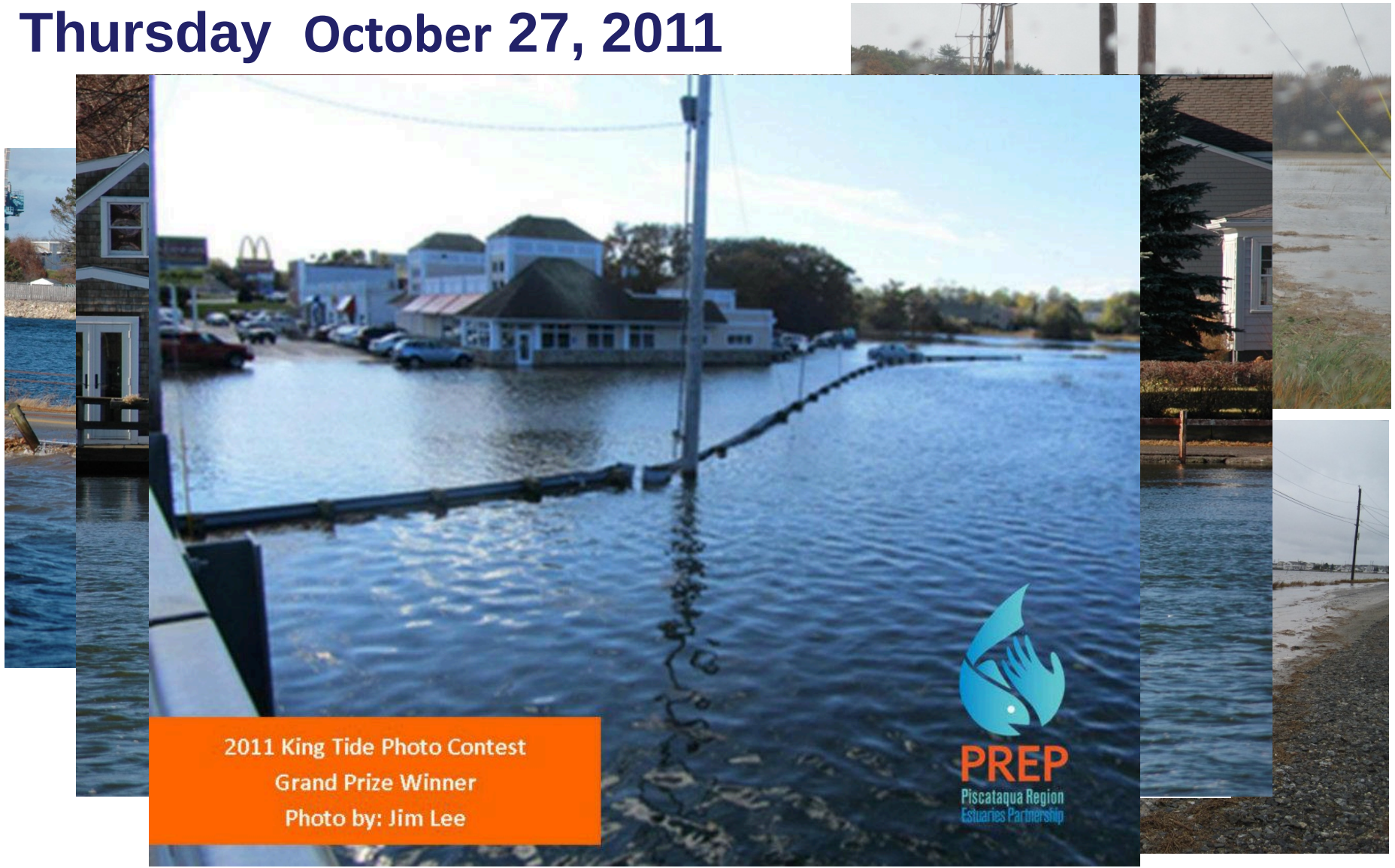
FOUNDATION FOR INFORMED DISCUSSION

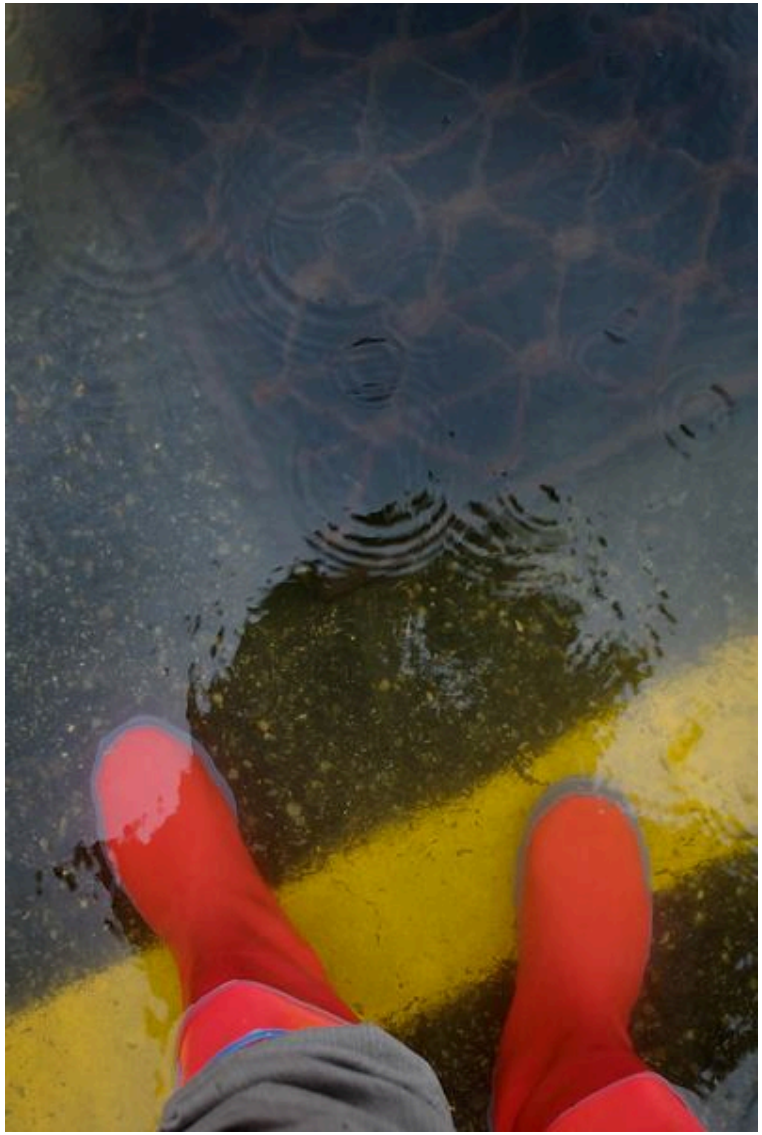
- ❑ Unique learning opportunity - local decision-makers and technical assistance providers
- ❑ Multi-community, stakeholder-driven project
- ❑ 1st economic and vulnerability analysis of municipal assets in the New Hampshire seacoast region
- ❑ Framed adaptation as a strategy that offers solutions
- ❑ Discussion of inter-municipal cooperation – road network, services, regional economy, ecosystems, flood protection
- ❑ Peer-to-peer learning

King Tide Photo Contest

Piscataqua Region Estuaries Partnership / NH CAW

Thursday October 27, 2011





Wrestling with uncertainty about the future

- Consider **future conditions** for planning and investments
- Intersection municipal **planning** and public/private **investments**
- Need **citizens support** decision-makers
- Effective **communication** of information and solutions
- Encourage **action** based on best available information and guidance
- Municipalities can **choose their future**
- Power in **choice and opportunity**

NH COASTAL ADAPTATION WORKGROUP
Climate Adaptation for Coastal Watershed Communities

Lessons Learned through Engagement

Trust, relationships, listening

Local stories and experience

Community Champions – the “Don effect”

Educate and inform decision makers

Prioritize actions critical to achieving local goals

Support collaborative solutions

Measures of Success

What does adaptation look like?

Chris Keeley

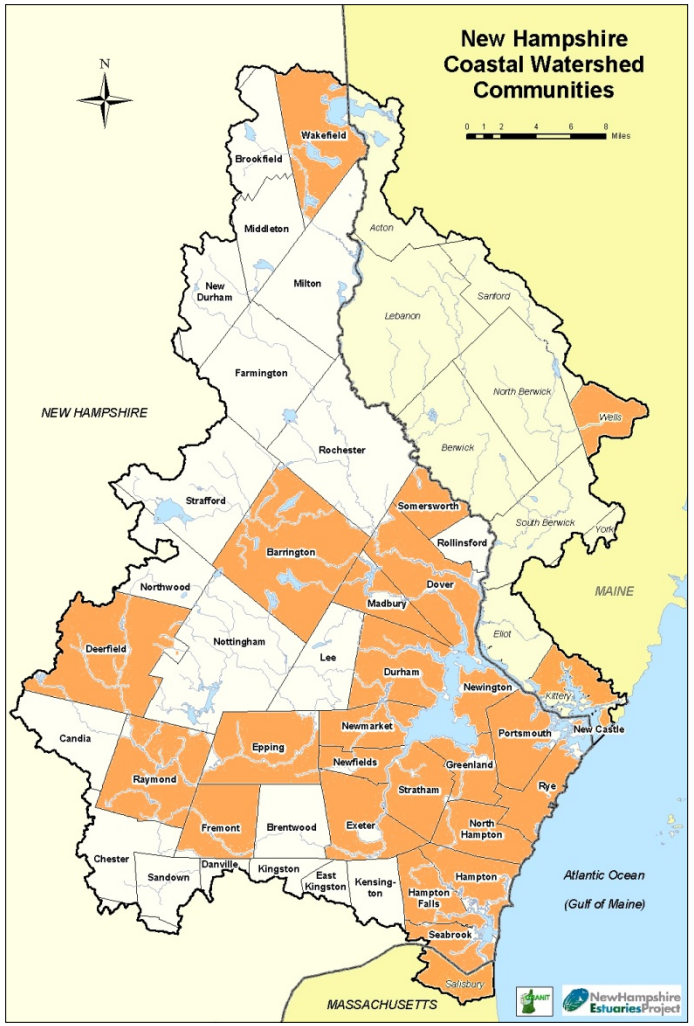
New Hampshire Sea Grant
Univ. of NH Cooperative Extension
Great Bay National Estuarine Research Reserve

CAW is Engaged with Communities

- Connected with <u>over 23</u> NH coastal watershed municipalities, and beyond!
- Interacting <u>regularly</u> with communities over time.

Through a combination of:

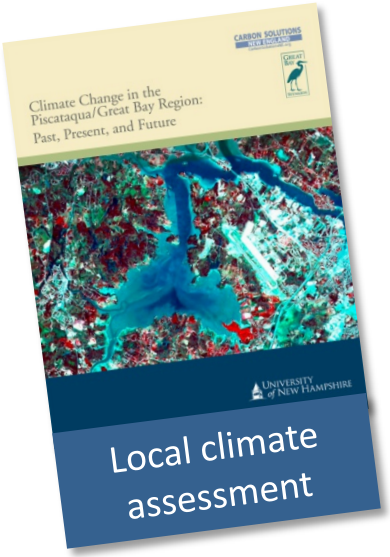
- *Targeted projects*
- *Open workshop series*
- *CAW newsletter*



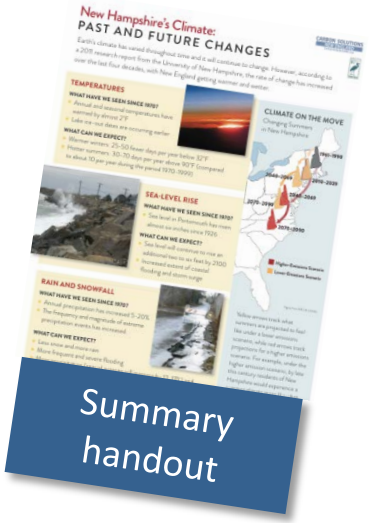
Orange indicates communities that have attended CAW workshops or partnered with CAW on adaptation projects.

CAW is Responding to Local Needs

CAW has secured and collaborated on $2.5M+ in grants for tools, technical assistance, and engagement.

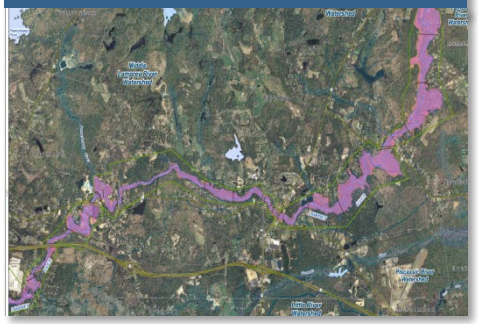


Local climate assessment



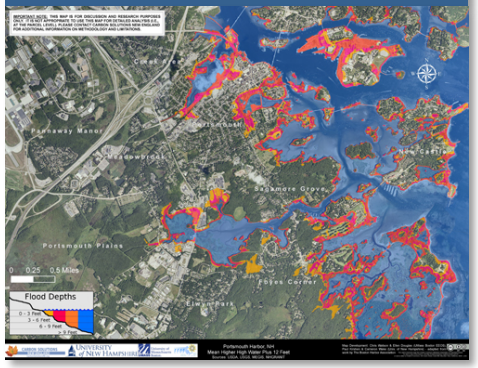
Summary handout

Updated floodplain maps & legal research



Working directly with communities

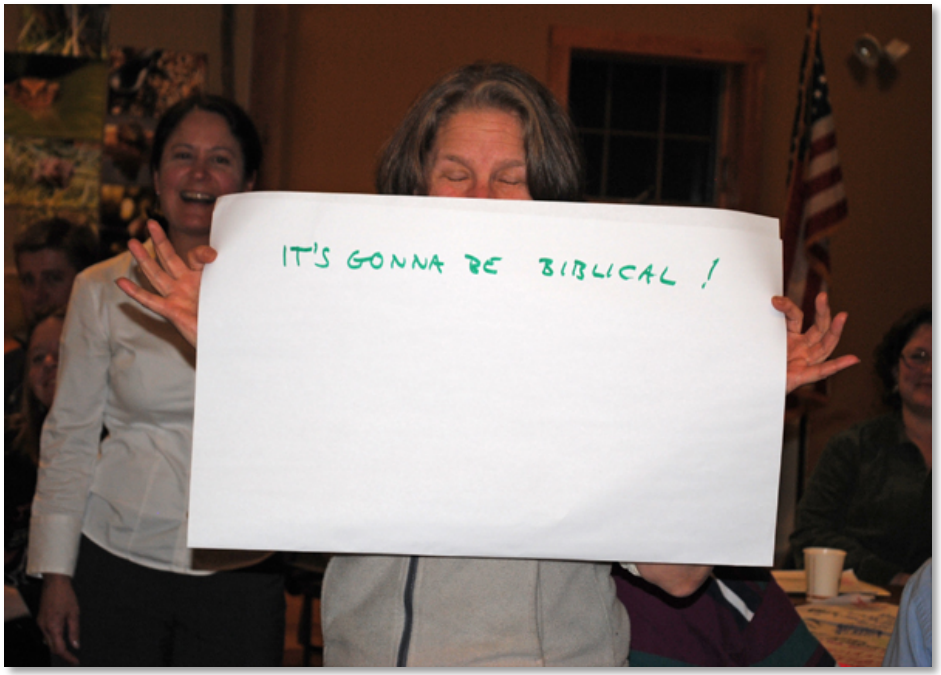
Sea-level rise maps



Our Community Members are Learning

Increases in knowledge, motivation, and confidence by 200+ community participants.

- Strong attendance at climate workshop series
- Increasingly informed dialogue



Community members are talking about what sea-level rise means to them.

Learning is quantified by participants in post-session evaluations

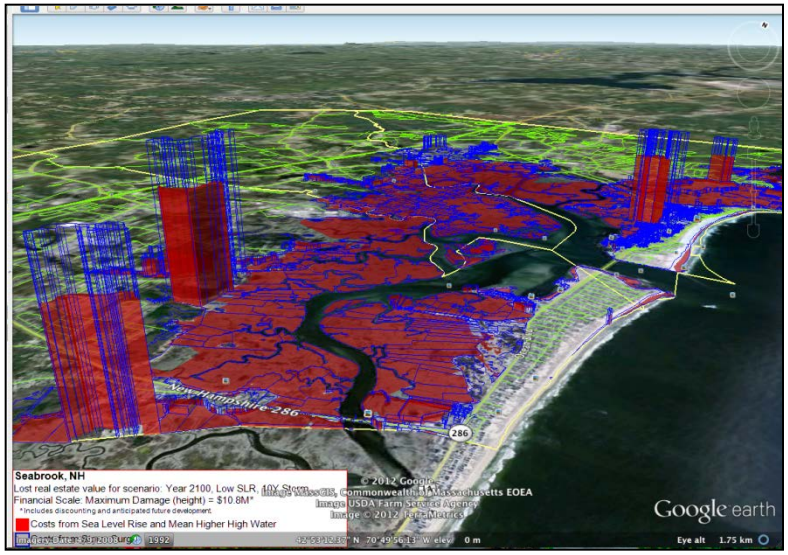
Our Community Leaders are Gaining Motivation

They are “connecting the dots” between projects.

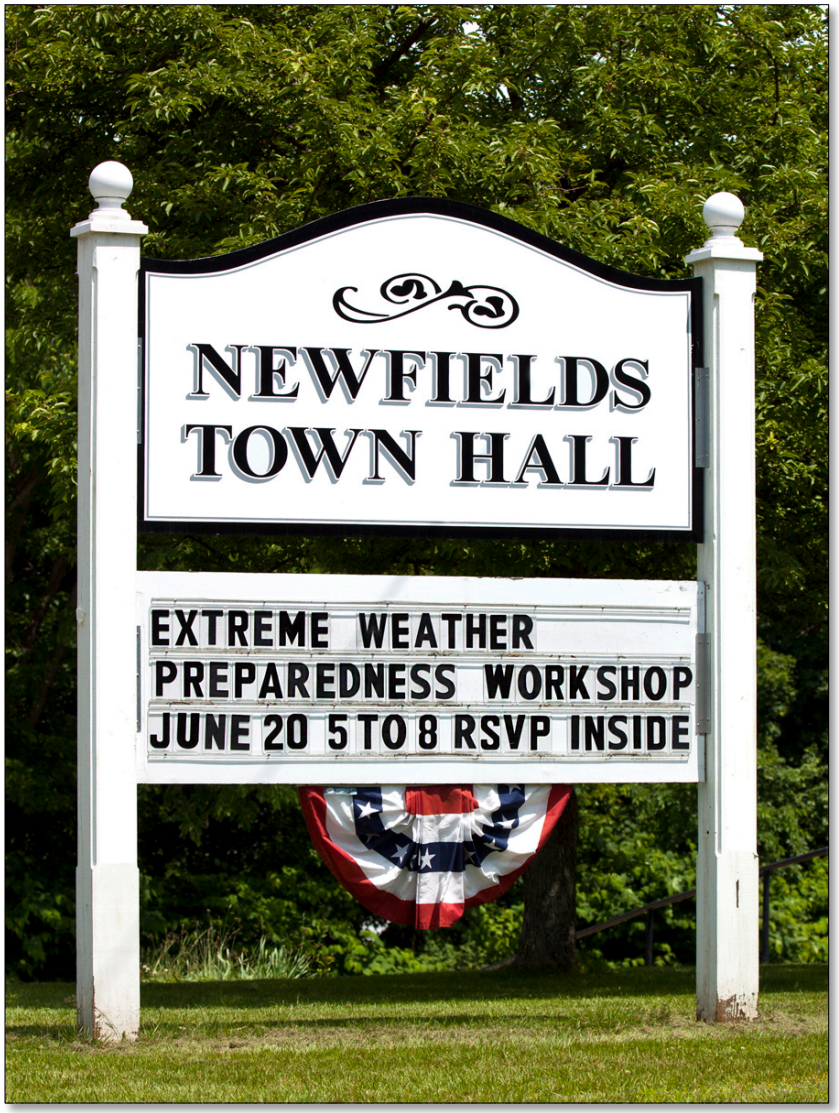
“I came to this project meeting tonight because the project with Newfields really got us thinking about stormwater, and this seemed like a good next step.”
– Planning board member

Our Communities are Gathering Information

- Talking about vulnerabilities in Newfields.
- Identifying priorities for economic impact analysis in Hampton-Seabrook Estuary.
- Hiring consultants to conduct assessments & make recommendations in Portsmouth.



Our Communities are Enhancing Local Regulations



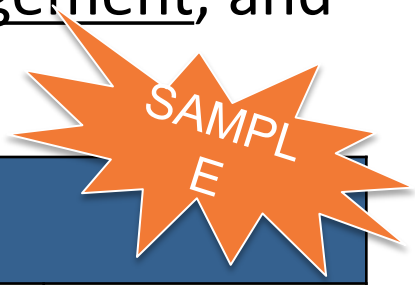
Updating stormwater management regulations within subdivision and site plan review.

Our Communities are Revising Local Plans

- Referencing climate change and extreme weather in the Newfields Master Plan.
- Adding a climate change chapter in Durham's hazard mitigation plan.
- Updating future land use chapter in Newmarket with climate information.

Our Communities are also Creating *New* Plans

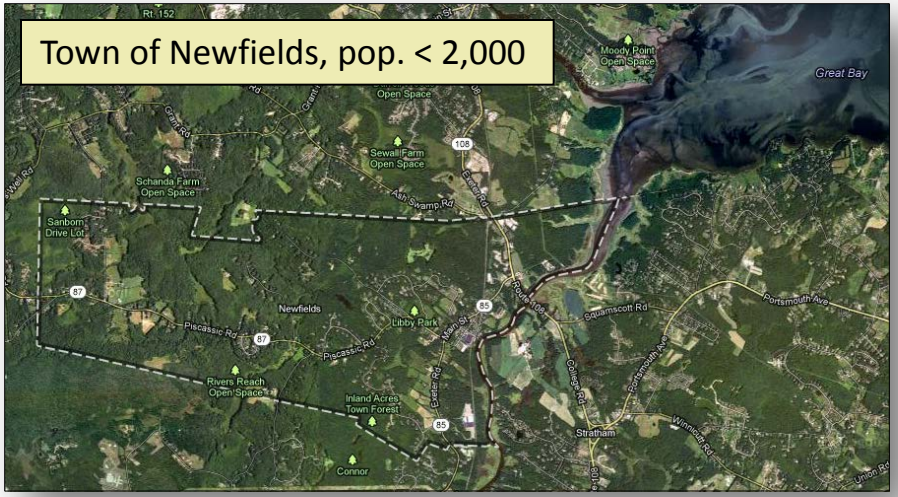
Newfields developed an "Action Plan" to address two focus areas identified by residents: stormwater management, and emergency preparedness.



Focus Area #1: Stormwater Management				
Actions	**People**	**Costs**	**Timeframe**	**Notes**
Outcome #1: A web-based map of stormwater infrastructure that is easy to access and update.				
1. Inventory the *location*, *capacity*, and *condition* of stormwater infrastructure. • Contact UNH Civil Engineering Department about student volunteer project • Look into NH Coastal Program funding, New England Grassroots Environment Fund, and others	Planning board PB Chair Coastal Adaptation Workgroup	None to low	Spring 2013	There are several options for obtaining this information: (a) Incorporate as a CIP action, (b) pursue through volunteer collection, (c) Hire a contractor
…	…	…	…	…

Our Communities are Taking Voluntary Actions

Approval from Newfields selectboard for bulk-purchase of generators to provide discounted price & professional installation for residents.



Our Communities are Growing their Capacity

They are increasing their human, financial, and technical resources.

- Forming committees
- Partnering on grants
- Gaining information

Newfields formed an emergency preparedness group and stormwater management group.

"We need a 'three-town adaptation working group' to engage more people in our communities about climate change."

Measures of Success Show Clear Steps of Adaptation

- Tracking what communities do helps us learn, see gaps, and recognize the great work our communities are doing.
- Collaboration through CAW has been key to success.
- Our communities are making headway with adaptation.

Thank you!

Questions?

- The Model: Coastal Adaptation Workgroup (CAW)
- The Methods: Innovative and Diverse
- The Measures of Success: For CAW and our Communities
- Other questions or comments

Presented by:
Steve Miller, Sherry Godlewski, Julie LaBranche, and Chris Keeley

Additional Resources from New Hampshire

COAST in Action: 2012 Projects from Maine and New Hampshire
New England Finance Center, July 2012
http://www.cascobay.usm.maine.edu/publications.html

NH Coastal Adaptation Workgroup – Storm Smart Coast website and Blog
http://nh.stormsmart.org/ and http://nhblog.stormsmartorg/

Climate Change in the Piscataqua / Great Bay Region: Past, Present, and Future
http://carbonsolutionsne.org/

Assessing the Risk of 100-year Freshwater Floods in the Lamprey River Watershed of New Hampshire Resulting from Changes in Climate and Land Use
http://100yearfloods.org/